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Impact of community violence on the workload of a district general hospital

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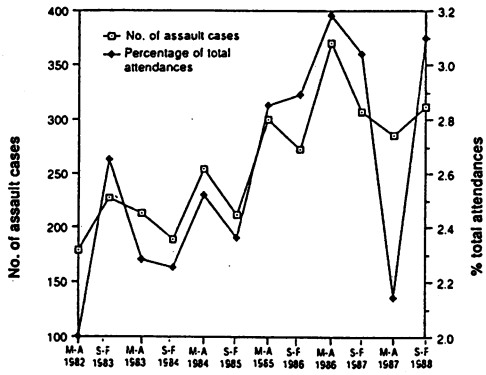
SUMMARY

Clinical observation suggests that deliberate violence against the person is increasing in both incidence and severity in the community. Over a six-year period there was a trend towards an annual increase in the number of attendances at the Waveney Hospital as the result of assaults. A retrospective study for a six-month period (August 1987 to January 1988) defined the pattern of attendance, injuries and treatment for 284 cases. Most of the victims were young males who presented outside normal working hours with superficial injuries. Admission was required in 12% of patients.

INTRODUCTION

Reports in the popular press, police reports and clinical opinion would suggest that there is increasing violence in the community. In 1985 there were 3,475 offences against the person reported to the police, 4,205 cases were reported in 1986 and 4,198 in 1987. The number of serious crimes and cases of wounding with intent in 1986 was 200 and had increased to 282 in 1987. In this hospital from March 1982 the accident and emergency department daily patient register was used to identify those patients presenting with injuries resulting from an alleged assault. These records show an increase in the number of assault victims attending, with a peak in 1986. There has also been an increase in the total new attendances but the percentage of those attending with injuries sustained as the result of alleged assault has generally risen from about 2·0% to about 3·0% during this time. (Fig 1).

Figure 1: Assault victims attending the accident and emergency department and the percentage of total attendances 1982-1988



M-A: March to August
S-F: September to February

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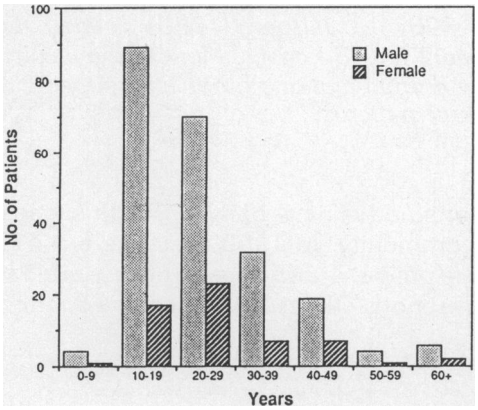
Published information with regard to assault victims and the injuries they have received is sparse and usually confined to the concomitant effects of violence and alcohol intoxication. A retrospective study was undertaken in this hospital to define the extent of the problem in the community served by a district general hospital.

PATIENTS AND METHODS

For the period August 1987 to January 1988 patients presenting as the result of an alleged assault were identified from the daily register and the case notes were retrieved for detailed investigation. From this source information with regard to the patient's name, age, sex, presenting injuries and initial management was recorded. For patients admitted to the hospital the records were obtained to ascertain the nature of any further treatment and its outcome.

Figure 2: Age and sex distribution of assault victims

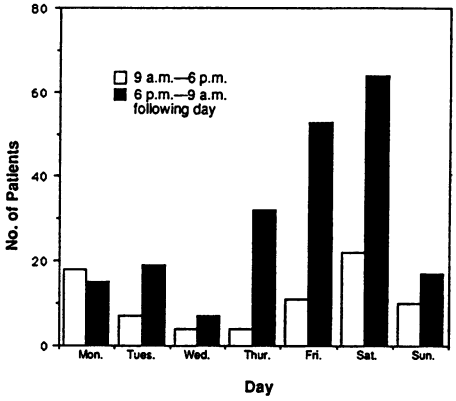


RESULTS

During the six-month period there were 10,343 new attendances. Of these, 294 cases were identified from the daily register as victims of assault. On retrieval of the case notes, ten patients had injuries which were not the result of an assault and were therefore excluded from the survey. The remaining 284 patients represent 2·75% of the new attendances. Of these 222 (78%) were male and 62 (22%) female with a mean age of 27 years (range 2·5 to 76 years). Two-thirds of assault victims were aged between 10 and 30 years. (Fig 2).

Figure 3 illustrates the pattern of attendance of the assault victims by day of the week and by time of day. Eighty-four per cent of the patients attended outside "office hours" (ie 9 am – 6 pm; Monday to Friday) and 41% attended on Friday and Saturday nights. For six of these patients the time of arrival was not recorded in the day register or in the case notes.

Figure 3: Day and times of arrival



The trauma sustained was classified according to the site and nature of the injury and the results are recorded in Table I. There were 221 head and neck injuries and 116 cases of lacerations including stab wounds.

One hundred and forty-three patients required 188 radiological examinations of which 22 (7·7%) showed fractures. A further 28 (9·8%) patients were diagnosed clinically as having nasal bone fractures without X-ray. (Table II).

TABLE I

Site and type of 367 injuries in 284 patients (some patients had more than one injury in more than one site)

Site of injury	*No of patients*	*Bruising*	*Abrasion*	*Laceration*
Face and neck	172	104	38	57
Scalp	49	23	7	22
Upper limb	72	43	11	23
Trunk	42	25	9	7
Lower limb	32	24	6	7
Total	367	219	71	116

TABLE II

Radiological examinations undertaken and fractures identified (143 patients had 188 separate sites X-rayed)

X-ray	*No of patients*	*No with fractures*
Skull	60	0
Facial bones	41	9
Nasal bones	0	28
Cervical spine	3	0
Upper limb	30	3
Chest	32	3
Abdomen	8	0
Lower limb	14	1
Total	188	44

Seventy-three (23%) patients did not receive any treatment including seven patients who left the accident and emergency department either without waiting to be seen or having refused treatment; 138 patients received treatment of whom 64 required suturing of lacerations. Twenty-nine had wrist and ankle strapping, 23 dressing of wounds and nine required a plaster of paris with or without manipulation. Analgesics were given to 33, tetanus toxoid to 28, antibiotics to four, a cervical collar to three and eye ointment to two patients. Forty-two (15%) patients were referred to specialist units, usually as an out-patient; patients with nasal bone fractures were referred to the ENT clinic within the hospital but other patients required referral to maxillo-facial surgeons, ophthalmologists and orthopaedic surgeons. Thirty-four (12%) patients were admitted to the Waveney Hospital of whom 33 were admitted to the surgical unit and one to the medical unit, with an acute exacerbation of asthma, having been severely kicked about the chest. Two-thirds of these patients were admitted for observation after sustaining minor closed head injuries of whom 50% were discharged within 24 hours. One child, admitted for head injury observation, remained in hospital for six days while social workers assessed his domestic circumstances.

There was one death, a 69-year-old man, admitted for observation following a blow to the head, who collapsed 36 hours after admission with ventricular fibrillation, and died despite attempted resuscitation. Autopsy showed no significant head injury but extensive coronary artery diease was found. Illustrative of the major trauma seen were three patients who underwent emergency surgery as the result of stabbing incidents. A 28-year-old man presented with a carving knife protruding from his left loin which, on removal under general anaesthesia, was found to have produced a 3cm laceration in his left kidney necessitating surgical repair. A 50-year-old man, who had been stabbed three times during a domestic disturbance, received superficial injuries to his upper arm and thigh and one stab wound to the abdomen which was found at laparotomy to have produced two perforations of his ileum and a further perforation of the caecum at the base of the appendix. A third case was a 27-year-old man, who had been stabbed in the abdomen at his engagement party and was found at laparotomy to have lacerations to his liver, pancreas and splenic vessels leading to repair of the liver and pancreas and to splenectomy. Details of the remainder of inpatient treatment are summarised in Table III.

TABLE III

Assault victims admitted to surgical unit, their inpatient treatment and time spent in hospital

Treatment	*No of patients*	*Length of stay days*
Observation after head injury	21	1 – 6
Observation after other injuries/awaiting transfer	5	1
Exploration of wounds under general anaesthesia	3	1 – 10
Laparotomy	3	9 – 16
Manipulation under general anaesthesia and transfer to specialist unit	1	1

DISCUSSION

There has been considerable publicity surrounding the increased level of community violence, with recent reports on public disorder in rural areas showing that personal violence is not confined to the inner city areas.

The Waveney Hospital serves two large market towns, Ballymena and Antrim, and the surrounding rural area with a catchment population of 100,000. During the study period 2·75% of the new attendances at the accident and emergency department resulted from alleged assault which is similar to the 2·3% recorded by the Cardiff Royal Infirmary.[1] The majority of victims, including all of those most seriously injured, arrived at hospital at night when the accident and emergency department was minimally staffed by doctors and nurses (one surgical senior house officer and two trained nurses). When dealing with uncooperative and disruptive patients the staff are at risk of becoming victims of assault themselves and this problem has been addressed in the DHSS report on violence to staff,[2] the guidelines suggesting improvements to the design of accident and emergency departments, advice on adequate staffing and appropriate training and procedures for dealing with and reporting violent incidents. No member of staff in this hospital was assaulted during the period of the study.

It was not possible within this retrospective study to assess the prevalence of alcohol ingestion amongst all the victims, but ingestion of alcohol or suspected intoxication was recorded in 45% of the notes of those patients admitted to hospital which accords well with a recent study by Walsh and McLeod[3] who reported that 70% of assault victims had a positive breath test and 50% had blood alcohol levels in excess of 80mg/100ml. Shepherd et al found that there was a direct relationship between the degree of intoxication and the severity of the injuries sustained.[4] The injuries recorded in our series commonly resulted from punching or kicking but a number of patients had been attacked with weapons such as broken glass, iron bars and knives. The task of assessing intoxicated or uncooperative patients with obvious superficial injuries and yet with life-threatening head or intra-abdominal trauma is often the responsibility of relatively inexperienced junior medical staff. Trauma scales based on the extent of anatomical injury are of limited value in the initial assessment of the patient and by applying one such classification to this study, (enumerating haematomas, lacerations and fractures), four seriously injured patients would have been initially categorised in the least injured group.[5] However, three of these men required significant surgical intervention and the other patient died. At present there are no suitable physiological trauma scales which readily apply to this type of trauma.

Fifty percent of patients underwent radiological investigation. Sixty patients with head injury fulfilled the Royal College of Radiologists' criteria requiring skull X-rays to be taken (loss of consciousness, substantial scalp injury, difficulty in assessment;[6] however no bony injury was identified. In keeping with advice from the department of Otorhinolaryngology, Belfast City Hospital, that X-rays were of no value in the management of uncomplicated cases of nasal trauma, there has undoubtedly been a reduction in the number of these requests.

The impact upon the overall workload of the accident and emergency and surgical departments is relatively small but the majority of these patients, who are often difficult to assess and may be reluctant to be treated, present at times when staffing levels are low and produce considerably more work than the normal patient. Because of the risk of a possible significant injury, these uncooperative and difficult patients cannot be taken immediately into police custody.

Other significant consequences of civil violence include long term problems for the victim and his family which may subsequently involve the general practitioner and the social services. Another major problem in most district hospitals is the absence of an emergency admission unit, which leads to abusive and disruptive patients being admitted at night directly into surgical wards with ill and post-operative patients. As a "knock-on" effect these acute surgical beds become blocked thus delaying planned admissions for elective surgery.

In financial terms Evans asserts that the annual expenditure for the National Health Service, in the treatment of assault victims, may be in excess of £18 million or approximately £33,000 per 100,000 of the population.[1] By applying DHSS charges for outpatient consultation, inpatient stay, radiological investigation and theatre use the estimated annual cost to this district may be in the region of £38,000.

The police authorities have already introduced new measures to try to reduce the level of violence and to institute more effective means of dealing with offenders. Doctors have the immediate responsibility for the initial assessment and care of the victims, and the Faculty of Community Medicine of the Royal College of

Physicians has stated that "tackling violence in a constructive way must be a major goal for health promotion". To aid this goal the extent of the problem must first be defined.

This study confirms the trend of increasing violence in the community in the last five years, as indicated by attendance at hospital for treatment. This study has also focused on the size of the problem for a small district hospital in a mixed urban and rural community. Obviously the figures presented do not reflect the full extent of the problem for the community as many victims of assault sustain minor injuries which do not require hospital treatment and many will be treated outside hospital by general practitioners. If this trend continues there will be a need for some reallocation of resources to meet the increasing demand and ongoing complications resulting from community violence.

REFERENCES

1. Richmond PW, Evans RC. Non-accidental injury — the adult problem. *Health Trends* 1989; **20**: 98.
2. Health Services Advisory Committee. Violence to staff in the health services. London: HMSO, 1988.
3. Walsh ME, MacLeod DAD. Breath alcohol analysis in the accident and emergency department. *Injury* 1983; **15**: 62-6.
4. Shepherd J, Irish M, Scully C, Leslie I. Alcohol intoxication and severity of injury in victims of assault. *Br Med J* 1988; **296**: 1299.
5. Yates DW. Injury scoring systems. *Intensive therapy and clinical monitoring* 1989; **10**: 38-44.
6. Patient selection for skull radiography in uncomplicated head injury. A national study by the Royal College of Radiologists. *Lancet* 1983; **i**: 115-8.